Amendments to the Claims

1. (Currently Amended) A method of ablation laser-machining, comprising the steps of:

generating pulses at a repetition rate of 0.1 to 50 MHz ~~by~~ using one or more semiconductor-chip laser diodes, ~~each~~ a ~~pulse~~ member of the pulses having a pulse-duration of less than three picoseconds;

directing a ~~less than 1 square mm~~ beam of the pulses ~~to~~ toward a work-piece, the beam having a spot area of less than one square millimeter at the surface of the work-piece and ~~with~~ an ablating pulse-energy-density; and

scanning the beam ~~with~~ using a power-driven scanner to ablate a scanned area on the work-piece at least 25 times larger than the ~~beam area~~ spot area of the beam at the surface of the work-piece.

2. (Currently Amended) The method of claim 1, wherein the ablating pulse-energy-density is 0.1 to 20 Joules per ~~/~~square centimeter.

3. (Currently Amended) The method of claim 1, wherein the scanned area on the work-piece is at least 100 times larger than the ~~beam area~~ spot area of the beam at the surface of the work-piece.

4. (Original) The method of claim 1, wherein the pulse-duration is 50 femtoseconds to 1 picosecond.

5. (Currently Amended) The method of claim 1, wherein the ~~beam area~~ spot area of the beam at the surface of the work-piece is 1 to 2,500 square microns.

6. (Currently Amended) The method of claim 1, wherein the ablating pulse-energy-density is between 0.1 and 8 Joules/ per square centimeter on the work-piece.

7. (Currently Amended) The method of claim 1, wherein the pulses are generated at ~~0.~~1 to 50 MHz.

8. (Original) The method of claim 1, wherein the beam is scanned in one direction.

9. (Original) The method of claim 1, wherein the beam is scanned in two directions.

10. (Original) The method of claim 1, wherein the beam is scanned in a spiral.

11. (Currently Amended) A method of ablation laser-machining, comprising the steps of:

generating ~~0.6 to 100 MHz~~ pulses at a repetition rate of 0.6 to 100 MHz, a duration of a member of the pulses being ~~each pulse having a pulse-duration~~ less than three picoseconds;

directing a ~~less than 1 square mm~~ beam of the pulses toward a work-piece, the beam having a spot area at the surface of a work-piece of less than 1 square millimeter ~~to a work-piece with an ablating pulse-energy-density~~; and

scanning the beam with a power-driven scanner over a scanned area on the work-piece at least 25 times larger than the spot area of the beam at the surface of the work-piece~~beam area~~.

12. (Currently Amended) The method of claim 11, wherein the ablation laser-machining is part of a surgical procedure.

13. (Currently Amended) The method of claim 11, wherein the ablation laser machining is part of a surgical procedure, and the ablating pulse-energy-density is between 1 and 10 times ~~the~~ an ablation threshold of the work-piece.

14. (Currently Amended) The method of claim 11, wherein the ablation laser machining is part of a surgical procedure, and the ablating pulse-energy-density is between 1 and 3 times ~~the~~ an ablation threshold of the work-piece.

15. (Original) The method of claim 11, wherein the pulses are generated by at least one optical amplifier.

16. (Currently Amended) The method of claim 11, wherein the pulses are generated by one semiconductor optical amplifier (SOA) and the pulses ~~contain~~ have an energy of less than about 50 micro-Joules per pulse.

17. (Currently Amended) The method of claim 11, wherein the pulses are generated by one fiber amplifier and the pulses ~~contain~~ have an energy of less than 10 micro-Joules per pulse.

18. (Original) The method of claim 11, wherein the beam is rasterized.

19. (New) A system comprising:

a semi-conductor chip laser diode configured for generating pulses at a repetition rate between 0.1 and 50 MHz;

a semiconductor optical amplifier for amplifying the pulses, to generate amplified pulses;

a dispersive element configured for compressing the amplified pulses; and

a scanning element configured for scanning a beam of the amplified pulses to ablate a scanned area at least 25 times larger than spot area of the beam at the surface of the work-piece.

20. (New) The system of claim 19 further comprising a cauterizing laser.